Concentrated Solar Radiation – From power to renewable fuels

Wednesday, November 8th, 2017

915/W133 (*Skype option*) | 10:30 -11:30 am

Converting solar energy efficiently is a key for the development of the energy economy. Concentrated solar power is established since the 1980s but its value is just seen as the produced heat can be stored in high volumes at low cost. The development will continue and more processes especially fuel production from concentrated solar radiation will follow. But also ther high temperature industrial processes. The presentation will give an insight in how concentrated solar radiation can be coupled into production processes. It will discuss the benefits and challenges of using the sunlight directly instead of converting it into other energy vectors.

The main focus will be on technologies with the perspective of large scale production at very high temperatures. Therefore solar tower systems for such production processes will be presented. Also the different components like concentrator, receiver, and reactor of the solar production plants will be described, possible locations will be discussed, and synergies with other R&D efforts on using high temperature heat will be shown.

The presented technologies will be put into a global picture to demonstrate the worldwide commitment in developing the technologies.

Prof. Dr. Christian Sattler is head of the Department of Solar Chemical Engineering of the German Aerospace Center's Institute of Solar. He is also professor for solar fuel production at the Technical University of Dresden; The key area of his work is the production of fuels especially hydrogen by solar thermo- and photochemical processes. In 1997 he received his Ph.D. in chemistry from the University of Bonn, Germany. Since then he works with the German Aerospace Center in a number of different positions. Additionally amongst others, he serves as vice president of the Hydrogen Europe Research association a member of the European Joint Technology Initiative for Fuel Cells and Hydrogen, as member of the Leadership Team of the Energy Conversion and Storage Segment of the American Society of Mechanical Engineers ASME, and as the national representative of Germany to tasks of the IEA's SolarPACES and Hydrogen Implementing Agreements.